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REFERENCE #11
SITE NAME MATTESON-SEBASTON
SITE ID ILD980606222



ILLINOIS STATE GEOLOGICAL SURVEY

NATURAL RESOURCES BUILDING, URBANA, ILLINOIS 61801

TELEPHONE 217 344-1481

Jack A. Simon, ACTING CHIEF

P. O. Box I
Warrenville, Illinois 60555
July 14, 1975

US EPA RECORDS CENTER REGION 5



414129

SUBJECT: Cook County - Land Pollution Control
Matteson/Project I-57

Mr. Thomas E. Cavanagh, Jr.
Permit Section
Division of Land Pollution Control
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

ED
RECEIVED

JUL 16 1975 C.

ILL. E.P.A. - D.L.P.C.
STATE OF ILLINOIS

Dear Mr. Cavanagh:

This is in response to your request of July 2, 1975, for a description of the hydrogeology in the vicinity of a proposed sanitary land-fill site located in the $W\frac{1}{2}$ of the $SW\frac{1}{4}$ of Section 28, T. 35 N., R. 13 E., Cook County.

The property was visited on July 9, 1975. It is located in an area of rolling, morainic topography. The site slopes gently to the north and the northern half is fairly low and poorly drained. In several areas here water was ponded in the fields, which are fallow at present. The southern half of the property is somewhat higher in elevation so that drainage is better and no ponding was observed in this area. The fields here are planted in corn.

Prior to the construction of I 57, which now forms the eastern boundary of the property, natural drainage from the site was towards the northwest into Butterfield Creek. The course of Butterfield Creek was altered when the highway was built, however, and it now flows north in a channel on the east side of the I 57 right-of-way.

There was a small swamp in the northeast corner of the site before the construction of I 57. Materials from this swamp were excavated for highway borrow, however, so there is now a small lake here. The shores of this lake are still marshy in some places and support cattails. The water level in the borrow pit was about five feet below ground surface and this level probably represents the top of the zone of saturation on the site.

July 14, 1975

On the north and south banks of the borrow pit fine-grained material containing numerous small pebbles is exposed. Maps in the Illinois State Geological Survey files identify this material as silty clay till of the Wadsworth Member of the Wedron Formation. Enclosed are the logs of two bridge borings drilled by the Illinois Division of Highways along I 57 east of the site at Saulk Trail and at the Elgin, Joliet, and Eastern Railroad crossing. Both of these logs confirm the presence of predominantly silty clay to a depth of 49 and 51 feet.

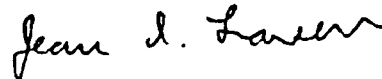
Maps and well logs in our files indicate that the glacial drift is approximately 75 to 80 feet thick on the site. These sources also indicate that in this area no sand or gravel aquifers occur within the body of the drift — that is, there are no sands or gravels within the drift more than 15 feet thick. Thin lenses and/or stringers of sand and gravel are commonly scattered throughout this drift, however.

Within one mile of this site, we have record of only five wells, although others maybe present for which we have no record. These wells all use the Silurian dolomite for water supply and they are all cased through the drift.

Disposal of solid waste at this site is not likely to have an adverse affect on ground-water supplies in the area. No sands and gravels are present in the drift capable of supplying water to wells, and the drift underlying the site is more than adequate in thickness and in permeability to prevent the downward migration of dissolved solids into the dolomite. Any leachate produced by landfilling will migrate only a very limited distance through the relatively impermeable till and will be attenuated rapidly.

Any small sand or gravel bodies encountered while trenching for the landfill should, of course, be sealed off and one or two borings on the site would also be appropriate to definitely ascertain the sequence of materials on the property.

Yours truly,



Jean I. Larsen
Associate Geologist
Northeastern Illinois Office
Section of Ground-Water Geology
and Geophysical Exploration

JIL/jge
Encls.

cc: Onderdank
Leland

